TEXTILE TECHNOLOGY DIGEST

VOLUME 12 APRIL, 1955 NUMBER 4

ABSTRACTS

FIBERS A

The friction and wear of fibers

J. A. Chapman, M. W. Pascoe and D. Tabor (Univ. of Cambridge). *J. Textile Inst. 46:* P3-P22 (January, 1955).

The purpose of this paper is to discuss in general terms some of the basic mechanisms involved in the friction, wear and surface-interaction of long-chain polymers, plastics and fibers, and to describe some new techniques which have been used in these studies. According to the adhesion mechanism theory of friction originally developed for sliding metals, metals when placed in contact touch only at their high spots. At these points local pressures are sufficient to produce plastic flow and strong adhesion occurs by a process which may be called cold-welding. The strong junctions thus formed must be sheared if sliding is to occur, and this is primarily the source of the frictional resistance. 8 references.

Frictional forces between fringes of fibers

E. Lord (Shirley Institute). *J. Textile Inst. 46:* P41-P58 (January, 1955).

A study is made of some aspects of frictional forces which arise when a thin layer or fringe of fibers slides along a similar parallel fringe. The account is devoted mainly to cotton, and consideration is given to the changes in friction during fringe motion and the effect of repeated tests using the same fringes. The effect of frictional force of variant features such as area under pressure and normal load is investigated. Frictional measurements are given for a wide range of cotton varieties. The fiber maturity is found to have a marked effect on fiber friction, a result ascribed to the associated shape of section. Some limited additional data are given for man-made fibers. 15 references.

Propagation of longitudinal stress pulses in textile fibers. Part 1

M. Chaikin and N. H. Chamberlain (Leeds Univ.). *J. Textile Inst. 46:* T25-T62 (January, 1955).

A knowledge of the elastic properties of textile fibers, measured under dynamic conditions, is becoming of increasing importance for the elucidation of their visco-elastic properties and rheological behavior. A study of previous work on the subject, however, reveals serious gaps in present knowledge, particularly in regard to measurements on single fibers at frequencies greater than about 20 kc/s; also, determinations of the dynamic and static elastic moduli of the same samples, over a range of materials, are lacking. The present contribution describes in Part 1 an experimental method for the determination of Young's modulus for single textile fibers at a frequency of 100 kc/s, using a direct pulse-velocity method of measurement, and compares in Part 2 some values of dynamic elastic modulus obtained in this way with the static values measured on the same specimens, for a limited range of textile materials. The significance of the results as they affect the interpretation of the rheological characteristics of the fibers is briefly discussed. Part 1: 28 references. Part 2: 19 references.

Deformation of textile fibers during elongation

F. K. Sadykova. *Tekstil. Prom. 14, No. 2:* 30-35 (1954); *in Russian. Faserforsch. u. Textiltech. 5:* 353-358 (1954) *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 484 (June 30, 1954).

NATURAL FIBERS A 1

Check raw cotton with ultraviolet light

K. S. Campbell (School of Textiles, N. C. State College). *Textile World 105:* 128-129 (March, 1955).

Potential dye streaks can be forecast by checking raw cotton for differences in fluorescence under ultra-violet light. Dye acceptance and fluorescence were found to vary from crop to crop and area to area.

Degradation of cotton during mechanical processing

J. C. Whitwell and R. F. Schwenker, Jr. (*Letter to the editor*). *Textile Research J. 25:* 137-139 (February, 1955).

Source of unbleachable color in cotton

S. A. Simon and C. Harmon (Chicopee Manufacturing Corp.). *Am. Dyestuff Reptr. 44:* P100-P104 (February 14, 1955).

Sources of color in cotton are classified as dirt, geometric, intrinsic and extrinsic. Dirt refers to those sources readily removed by mechanical cleaning methods. Geometry covers the physical factors of shape. Intrinsic color refers to genetic color dependent upon variety of the seed; while extrinsic color is that brought about by exposure to the environment and not mechanically cleanable. It is shown that only extrinsic color interferes with bleaching. By means of color evaluation with a spectrophotometer, evidence is provided which shows that the so-called unbleachable colorant is developed by fungi.

Study of cotton fiber perimeters as calculated from arealometer values at low and high compression

N. L. Pearson. *Textile Research J. 25:* 124-136 (February, 1955).

For a group of cottons selected to show a wide range in fiber perimeter, differences in perimeter as calculated from arealometer specific surface and *D*, for ginned lint samples, were similar to differences in primary-wall perimeter; and the actual perimeter values differed little from those calculated from specific surface and array weight per inch. Moreover, calculated weight per inch differed little from values obtained by the array method. It was shown for a second group of cottons that, with but few exceptions, *D*, and consequently perimeter, etc., calculated from specific surface and *D*, decreased from raw stock to picker lap and then increased successfully for card sliver, first and second drawing sliver, and roving, the greatest changes in *D* occurring in the conversion of card sliver to first drawing sliver and second drawing sliver to roving. These results indicate that the fiber property values calculated from *A* and *D* will be valid for ginned lint samples, but will vary with processed samples and particularly will not be valid for samples that have been subjected to considerable mechanical drafting. 11 references.

Preparation of microbiologically resistant wool by chemical modification

H. Zahn and A. Wurz (University of Heidelberg). *Textile Research J. 25:* 111-124 (February, 1955).

Part 3: Reaction with monofunctional compounds; Part 4: Reaction with 1-fluoro-2,4-di nitrobenzene; Part 5: Reaction with bifunctiona compounds, Part 6: Quinone, ninhydrin, an heavy metal salts. 12 references. Part 1 appeare in the September, 1953 issue of the *Textile Re search Journal* and Part 2 in January, 1954.

MAN-MADE FIBERS A

Developments in man-made fiber produc tion and processing technology: 1954 re view. Part 2. Fiber production

Brit. Rayon and Silk J. 31: 62-66 (Januar 1955).

Fibrous minerals. Part 2. Glass fiber

Fibres 16: 43-46, 50 (February, 1955).

Survey of industrial uses of glass fibers.

Moisture absorption of viscose rayon: effect of high temperature treatments

Fibres 16: 57-59 (February, 1955).

This article describes experimental work which has been carried out on the heating of viscos fibers in steam under pressure, a simple treatmen which shows promise of being a practical wa of reducing wet swelling without recourse t chemical treatments.

Polymer progress. Part 1. Polyesters

J. A. Somers. *Brit. Rayon and Silk J. 31:* 71 74 (February, 1955).

An explanation for the general reader of the background of current development in man-made fiber raw materials.

YARN PRODUCTION B

OPENING, PICKING FIBER PRODUCTION B 1

Opening and cleaning of cotton

G. Dakin (Shirley Institute). *Textile Wkly. 55:* 406-410 (February 11, 1955).

An account of research at the Shirley Institute on opening and cleaning of cotton.

Progress report on performance of axi-feed and axi-flo

Whitin Rev. 22: 24-28 (January-February, 1955).

Test and mill data are presented on these new opening and cleaning machines.

CARDING AND COMBING B 2

Control roll on the card

Saco-Lowell Bull. 27: 25-31 (January, 1955).

Data are given on the use and advantages of control rolls on cards. Tables, diagrams, photographs.

How to keep flat cards in good mechanical condition. Part 1

W. J. Langlois. *Whitin Rev. 22:* 12-18 (January-February, 1955).

Items having a direct bearing on the first phase of fiber separation should be corrected first to put the cards back into quality production. The second phase of reconditioning deals with the cleaning function of the card and the third with the mechanical parts, drives, and package problems. In addition, there are comments on cleanliness, speeds and lubrication.

How to reduce card waste

J. F. Bogdan (North Carolina State College School of Textiles). *Textile World 105:* 87-101 (March, 1955).

This report of a one-year six-mill cooperative study of reduction of carding waste reveals that card waste can be reduced as much as 3% of lap weight, that settings, speeds, and modified lickerin assembly are major key factors, and that recommended speeds and settings, besides reducing carding waste, produce yarns of equal or better strength and appearance than conventional settings.

Load on the main roller of the roller and clearer card

M. V. Emmanuel. *Tekstil. Prom. 14, No. 8:* 24-28 (1954); *in Russian.* Through *Brit. Cotton Ind. Research Assoc. 35:* 88 (1955).

After the interaction between the main and the doffing cylinders of roller cards, a considerable portion of the fibrous material is retained on the main roller and returned to the feed unit where it is mixed with the new material and again conveyed to the main roller. The amount of the fibrous material retained considerably increases the load on the surface of the main roller in the zone between the feed unit and the doffing roller. The presence of the residual load on the surface of the main roller after its interaction with the doffing rollers has a considerable effect on the productivity of the machine, and the increased distribution coefficient between the main and doffing rollers must lead to an increase of the load from the feed unit. This explains the greater productivity of cards with two doffing rollers under otherwise identical conditions.

DRAWING AND ROVING B 3

Buttons and condensers for FS roving frames

Saco-Lowell Bull. 27: 44-47 (January, 1955).

Control devices for FS roving frames are described and illustrated.

Measuring motion for drawframes

H. Whitehead & Co. Ltd. *Textile Wkly. 55:* 246 (January 28, 1955).

A new mechanical measuring motion for drawframes to give a controlled guaranteed length of sliver in each can.

A new stop motion for continuous doubling frames

P. Andre. *Industrie Textile:* 627 (September, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 969 (1954).

The stop motion Liétaert (inventor) comprises a special top pressure roller which is fixed against a lifting-up lever. When one of the threads wound together breaks, a tension feeler activates the system of levers which raise and tilt the roller backwards and thus stop the delivery of the threads which remain wound on the cylinder and cap bars, ready to restart after the broken end has been pieced-up.

The real significance of doubling intermediate products for spinning

N. M. Belitsin. *Tekstil. Prom. 14, No. 7:* 24-26 (1954); *in Russian...* Through *Brit. Cotton Ind. Research Assoc. 35:* 16 (1955).

Tests on short sections of yarn (3 cm length) have shown that the reduced regularity of the product from drawing frames is not compensated for by doubling of the intermediate products. Doubling is only useful in the case of products having a similar count and degree of regularity; it is not advisable to rely upon subsequent levelling-out of the product as a result of doubling. The sliver from the first drafting passage, obtained after six doublings, was found to have a 10 per cent lower regularity than that from the combing machine. Thus, doubling of uneven intermediate products does not ensure regular roving and yarn formation.

Sliver cans versus roll formers

Textile Mfr. 81: 73-74 (February, 1955).

Details are given of a newly developed roll former which will work on all types and heights of drawing frames. The sliver is formed on two builder rollers and the pressure is by brake fitted with a special lining.

SPINNING, WINDING, TWISTING B 4

Applications of a theory of the spinning balloon. Part 2

M. Hannah (Leeds Univ.). *J. Textile Inst. 46:* T1-T16 (January, 1955).

In a previous paper, an account was given of a theoretical treatment of the balloon in cap spinning based on a solution of the equations of motion of a thread, including air resistance. Since the publication of this paper, further solutions of the same equations have appeared, which are based on more accurate assumptions, but are, at the same time, more cumbersome to use. The first part of this paper is therefore devoted to an assessment of the accuracy of the original solution in the light of the later papers. It is found that, for the practical conditions of cap spinning, its agreement with the fuller solution is good. Some constructive applications of the solution are then given. It can be used to predict size, shape and tension of balloon under any spinning conditions. A speed regulator can be devised, based on the theory, to allow constant tension spinning throughout the spinning process by altering the spinning speed. Alternatively, and much more simply, it is possible to predict a particular cap shape which should have the effect of producing nearly constant balloon tension for all bobbin sizes, i.e. throughout a doffing. In the third part of the paper, details are given of experiments using caps of this shape, and it is shown that they do, in fact, reduce considerably the drop in tension throughout a doffing. The last part of the paper summarizes the conclusions. 6 references.

The back top roller in the drawing rollers of the ring-spinning machine for man-made fibers, cotton and wool

K. Quaas. *Textil-Praxis 9, No. 8:* 808-811 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 968 (1954).

It is shown that, in existing drawing rollers of ring-spinning machines for cotton, the self-weighted back top rollers can be retained, although it may be assumed that they will be gradually replaced by saddle-weighted rollers. In worsted ring-spinning machines, self-weighted rollers are preferable. A new single-apron draw frame for long-stapled man-made fibers and wool is described. For new cotton draw frames which have exclusively saddle-weighted back top rollers, rollers with ball bearings are shown to be of advantage. For coarse and medium roving, plastic-covered rollers are preferable to leather-covered pressure rollers with felt sleeves.

Breakages during spinning

A. Valota. *Industrie Textile:* 711-719 (October, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 35:* 53 (1955).

Factors contributing to the breakage of yarn during spinning are discussed and thirty-five possible causes are enumerated.

Creeping deterioration—enemy of spinning rooms

A. L. Landau. *Textile World 105:* 134-136, 204-206 (March, 1955).

A realistic look at creeping deterioration and a systematic maintenance program for spinning frames.

Duplex splash attachment for novelty yarn twisters

Whitin Rev. 22: 19-23 (January-February, 1955).

With this new attachment, yarns containing splash segments of alternating colors can be produced, in contrast to the repetitive single color splash segments made with the single splash motion which imparts varying rates of motion to the upper line of delivery rolls only. Details are given.

Electro-magnetic brake for double twist spindles

J. Nadel. *Industrie Textile:* 623-624 (September, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 969 (1954).

An electro-magnetic device is described and illustrated, in which the magnet immobilizing the bobbin on a rotating spindle has the form of a swallow's tail and is mounted with a clearance of 8-10 mm between the poles of two nuclei of the magnetic circuit. Accessory devices necessary for the passage of the thread are provided. The device is easily adaptable for use in existing spinning mills and permits high revolution speeds of the spindles.

Features and adaptability of the woolen ringframe. Part 2

J. A. B. Mitchell. *Textile Mfr. 81:* 81-83 (February, 1955).

In spinning woolen yarns on the ringframe the same anomalies are encountered when fixing the draft as are experienced in mule-spinning. It will be found that the actual draft change-wheel required to reach the desired count is less than the calculated size.

How to spin rayon-carpet yarn

R. L. Barnes (American Viscose Corp.). *Textile World 105:* 122, 238-242 (March, 1955).

Highlights on how to spin coarse rayon-carpet fiber on the cotton system.

Modern stabilized ring spinning

R. M. Blackburn. *Textile Wkly. 55:* 412-415 (February 11, 1955); 496-498 (February 18, 1955); 591-593, 612 (February 25, 1955).

The features of the M.R.2 Platt ring spinning frame are described and illustrated in detail.

Slip measurements on back top drawing rollers of ring spinning machines

F. Koch. *Textil-Praxis 9, No. 9:* 815-818 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 968 (1954).

The slip of back top rollers was measured in dependence of the roller position and diameter, magnitude of load (self-weighting and saddle-weighting), and speed for various raw materials and counts. The tests were carried out on speed-frame rovings (various counts) of viscose rayon, cotton/staple rayon blends and pure cotton. Results are tabulated and shown in graphs.

Thread separator on ring-spinning machines

K. M. Bonin. *Tekstil. Prom. 14, No. 8:* 52 (1954); *in Russian.* Through *Brit. Cotton Ind. Research Assoc. 35:* 91 (1955).

The device is briefly described and illustrated.

YARNS B 5

Effect of the finish on the cord yield of rayon tire yarns

M. Warzée and G. Quintelier. *J. Textile Inst. 46:* P123-P136 (January, 1955).

The investigation of the effects of finishing agents shows that the dynamic coefficient of friction has little or no influence on the cord yield. As the static coefficient of friction increases, however, the tensile strength of the yarn falls. The explanation is found in the effect of the finishing agent on the torsional rigidity of the single yarns. A suitable finish allows the filaments to take more readily the necessary accommodating movements as the twist is inserted in the cord. Apparatus for the determination of twisting force during the insertion of twist is described and curves showing observed results are drawn. A high value for the static coefficient of friction is associated with high cord diameter, which, in turn, is connected with the functional loss of tenacity of the cord. But low cabling yield is thus only partly explained. With a low static coefficient of friction the packing of the filaments and the distribution of twist are both more regular, these effects contributing to higher cord strength.

Handbook of twisting. Chapter 5. Part 1. Effect of twist on dimensional changes

N. Truslow. *Textile Bull. 81:* 108-110 (February, 1955).

No twist

Textile Ind. 119: 100-102 (March, 1955).

How twistless yarn is made by the Tek-ja process. Photographs and diagrams.

FABRIC PRODUCTION C

Faults in woolen manufacturing

Textile Recorder 72: 79-81 (February, 1955).

The first of a series of articles which will describe how faults are caused in woolen manufacturing and how the cause of a fault can be diagnosed from the finished fabric.

French, Italian and German sizing and weaving machinery

Skinner's Silk and Rayon Record 29: 144-148 (February, 1955).

Some new machines are described and illustrated.

Technical progress in the jute industry

Textile Wkly. 55: 336-337 (February 4, (1955).

New machines for preparation and weaving are briefly mentioned including the Rapisonic homogenizer for emulsion mixing, drawing frames, sliver spinning frame, shuttle-loaders, and circular looms.

WARPING, SLASHING, YARN PREPARATION C 1

Preliminary calculation of the warp length so as to utilize the beam flanges

E. O. Hesse. *Melliand Textilber. 35, No. 11:* 1227-1229 (1954); *in German.* Through

Brit. Cotton Ind. Research Assoc. 35: 92 (1955).

Several methods of calculating the warp length and warp-beam diameter are compared with the author's own method, which is based on the weight of the yarn in kg calculated per cm of the beaming width between two beam flanges of known size, irrespective of the number of yarn layers or yarn count. Examples are given.

Sectional warping direct from spinneret

J. Sailer K.G., Germany. *Skinner's Silk and Rayon Record 29:* 156-157 (February, 1955).

Features of Sailer model SS sectional warpers for synthetic filament yarns are described. Photographs.

Tangled warps

W. C. Westbrook. *Textile World 105:* 120-121, 212-216 (March, 1955).

Proper warp preparation prevents warp tangles.

Non-stop slashing with automatic doffing device

Textile Ind. 119: 81-83 (March, 1955).

The doffer is an automatic device which severs the full warp and starts winding on a new loom beam without any stop or lag in yards-per-minute delivery. Its operation is described.

Sizing observations and problems

Textile Mfr. 81: 55-60 (February, 1955).

The different ways in which factors such as tensioning and drying may influence the production of a well-sized weaver's beam. 5 references.

WEAVING C 2

Electronic loom timing indicator

K. J. Butler and W. T. Cowhig (British Rayon Research Assoc.). *J. Textile Inst. 46:* T17-T24 (January, 1955).

The authors have developed a method of giving a continuous display of the relative motions of the different parts of a cyclical machine. This method of timing has been applied to the loom to show the instant of shuttle flight in relation to the beat-up motion of the lay and the opening of the shed. Measurements in the laboratory and the mill have demonstrated the importance of such dynamic timing.

Jacquard for automatic looms

Devoge and Co. Ltd. *Skinner's Silk and Rayon Record 29:* 164 (February, 1955).

A new jacquard which, when fitted to single shuttle automatic looms, is as easy to operate as a plain shedding motion. The machine will run equally well forward and backward.

Measurements on the loom. Part 1

H. Stein and W. Rohs. *Textil-Praxis 9, No. 9:* 841-847 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 971 (1954).

In this review, the authors discuss general problems such as warp- and weft-tension and the movement of the shuttle, and describe the measuring and control devices available, e.g. the Textronograph, various cathode-ray oscillographs, and stroboscopic measuring devices, with reference to the electromagnetically driven Robot camera. Bibliography.

Mechanics of tappet shedding. Part 2

J. Starkie. *Textile Mfr. 81:* 66-69 (February, 1955).

Discusses cross-rod shedding, tappet driving, combinations of roller and cross-rod shedding, split shedding and heddle reversing methods, etc.

Moquette loom

C. Labriffe. *Industrie Textile:* 727-734 (October, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 35:* 56 (1955).

The mechanism of looms for weaving plain and fancy moquettes is described and illustrated.

Stroboscopic study of spindle bumper straps

A. E. Chouinard. *Bull. Lowell Tech. Inst. Series 58, No. 2:* 3-17 (November, 1954).

This series of tests was conducted using three different bumpers, all of standard and accepted construction. Each bumper was placed on an S-6 C & K loom, and a series of photographs was taken from the point in the cycle where the picker is just breaking contact. 17 photographs.

KNITTING C 3

Interlock pattern constructions

J. Rab. *Skinner's Silk and Rayon Record 29:* 174-177 (February, 1955).

Nylon tricot manufacture and design. Part 3

J. Rab. *Knitter 19:* 43-45 (February, 1955).

FABRICS C 4

Crepes: investigation and assessment of fabric constructions. Part 2

D. C. Snowden and G. Hinchliffe. *Brit. Rayon and Silk J. 31:* 56-59 (February, 1955).

Design in woven fabrics. Part 20. New method of crepe weaving

D. C. Snowden. *Wool Rev. 27:* 39 (July, 1954).

Design in woven fabrics. Part 21. Modifications of Reiser's method for constructing crepe weaves

D. C. Snowden. *Wool Rev. 27:* 20-21 (August, 1954).

Design in woven structure. Part 27. New weaves from old

D. C. Snowden. *Wool Rev. 27:* 37-39 (February, 1955).

The rearranging of either the warp or the weft interlacings of a standard weave.

Felt from man-made fibers

H. G. Lauterbach (E. I. du Pont de Nemours and Co., Inc.). *Textile Research J. 25:* 143-149 (February, 1955).

A process for felting Dacron polyester fibers and the properties of the resulting felt are described. The felting of other man-made fibers is also being investigated. 15 references.

Novelty crash fabric

Am. Textile Reptr. 69: 27-30 (February 24, 1955).

Cloth analysis of a continuous filament viscose rayon crash.

Ornamentation of apparel fabrics. Part 3

V. Lobl and E. Waller. *Modern Textiles Mag. 35:* 64-67, 70 (November, 1954).

The special characteristics and applications of fancy twister effects are reviewed.

Ornamentation of apparel fabrics. Part 4

V. Lobl and E. Waller. *Modern Textiles Mag. 35:* 54, 60-67 (December, 1954).

This article deals with the manner in which novelty yarns fit into the overall picture of a mill's program, and with loop effects.

Ornamentation of apparel fabrics. Part 5

V. Lobl and E. Waller. *Modern Textiles Mag. 36:* 36, 70-72, 87 (January, 1955).

The imitation of novelty yarn effects through the appropriate weave is discussed.

Ornamentation of apparel fabrics. Part 6. Spot designs

V. Lobl. *Modern Textiles Mag. 36:* 41-46 (February, 1955).

Tufted rugs

Textile World 105: 105-109, 242-244 (March, 1955).

How Barwick Mills makes tufted rugs, by R. B. Pressley, p. 106-107, 242-244 and *How Barwick dyes tufted rugs,* by R. W. Pinault, p. 108-109, 242.

FINISHING AND CHEMICAL PROCESSING D

Aids to productivity in the woolen industry. Part 3

L. Bellwood. *Textile Mfr. 81:* 62-63 (February, 1955).

The preparation of scouring solutions is discussed, as well as tentering, plant maintenance, etc.

Finishing the newer synthetics

H. Moore (Fair Lawn Finishing Co.). *Am. Dyestuff Reptr. 44:* P133-P136 (February 28, 1955).

The author discusses first briefly the nature of nylon, Dacron, Acrilan, Dynel, Orlon, and Fiberglas and then takes up the finishing of fabrics containing these fibers.

New finishing machinery

H. F. Creegan (James Hunter Machine Co.). *Am. Dyestuff Reptr. 44:* P136-P138 (February 28, 1955).

Three items of new equipment are described: Du Pont Barotors, the Vapojet Dryer, and Eicken instruments (which measure the moisture content of textiles continuously).

Teddy bear pile fabric

Dyer 112: 1065-1067 (December 24, 1954); *113:* 35-37 (January 7, 1955); 115-117 (January 21, 1955).

Part 1: freeing the pile of twist and precautions to take in scouring. Part 2: adaptation of machinery, two-bath dyeing method, union colors and man-made fiber pile. Part 3: acetate and viscose rayon pile, mechanical carding and beating, and using a "tilting tenter".

Trade-named finishes and what they stand for

M. Newman (North Carolina Finishing Co.). *Am. Dyestuff Reptr. 44:* P138-P140 (February 28, 1955).

A quality control manager presents a plea for an appreciation of the great value of trade-marks for special finishes in merchandising textiles. Many important trade-named finishes are discussed to illustrate the argument. Something of the technology, properties, and testing involved for each specific finish is explained to show how the reputation of a trade-mark is established. The use of AATCC testing methods in such development is emphasized.

CHEMICAL PROCESSES D 1

Some design features of a pilot plant continuous range for chemical treatment of cotton yarn and fabrics

E. J. Keating, A. S. Cooper, A. L. Murphy and H. O. Smith (Southern Regional Research Laboratory). *Am. Dyestuff Reptr. 44:* 65-68 (January 31, 1955).

A group of basic textile finishing units, in a flexible arrangement that can be modified to handle various finishing treatments suggested by laboratory research, has been assembled to form a continuous chemical processing range of pilot plant size. Utility of the machine is illustrated by its adaptation to the partial acetylation of cotton. Necessary additions were a cooling cylinder, feed tanks, and an exhaust hood. Data obtained with the machine were used to design a commercial continuous acetylation range which is now in successful operation. 4 references.

Cyanoethylated cotton

A. J. Hall. *Textile Merc. 132:* 239-243 (February 11, 1955).

The preparation of cyanoethylated cotton is reviewed briefly and research on its dyeing is summarized.

Man-made fibers and modern trends in wet processing: 1954 review

Brit. Rayon and Silk J. 31: 60-64 (February, 1955).

Bleaching and scouring, fluorescent bleaches and heat-setting. 36 references.

Atmospheric and other oxidation effects in wool processing. Part 1

Wool Record 87: 156-157 (January 20, 1955).

Oxidation of wool oils.

Atmospheric and other oxidation effects in wool processing. Part 2

Wool Record 87: 211-212 (January 27, 1955).

Rancidity in wool oils is discussed.

Atmospheric and other oxidation effects in wool processing. Part 3

Wool Record 87: 272-273 (February 3, 1955).

In this installment, the author deals with the effects of wool bleaching and briefly describes two anti-shrink processes.

Atmospheric and other oxidation effects in wool processing. Part 4

Wool Record 87: 328 (February 10, 1955).

Oxidation of oil stains on wool goods in dyeing and some observations on the differences between oxidized and reduced chrome in dyeing.

The detection of melamine-formaldehyde resin with Tollen's solution by the Bernegger methods; formalization of cellulose fibers during resin finishing, and damage to the finished fabric

S. Kundig. *Textil-Rundschau 9, No. 11:* 581-583 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 97 (1955).

Experiments carried out on cotton and spun rayon fabrics, treated with free formaldehyde and formic acid as catalyst, proved that formalization of the fabric takes place, and that any damage that may have been caused by a resin finish is not able to affect the topochemical reaction by Bernegger method (use of Tollen's reagent: ammoniacal silver nitrate solution). The problem of fiber damage by the resin finish, however, is not yet solved.

The effect of anti-crease finishes on the light-fastness of substantive dyeings

H. Hansen and H. G. Buddicker-Lons. *Textil-Praxis 9, No. 9:* 863-865 (1954); *in Ger-*

man. Through *Brit. Cotton Ind. Research Assoc. 34:* 980 (1954).

A brief description is given of the main types of anti-crease finishes and the catalysts used. The light-fastness of substantive dyes is generally more affected by melamine- than by carbamide-resin finishes, but most of the benzocuprol dyes can be used for melamine-resin finished materials. The light-fastness of carbamide-resin finished dyeings is not impaired by after-treatment with a cation-active product (e. g. Levogen W W), and a very good fastness in the wet state is obtained by addition of 10-12 g/l. Levogen WW to the anti-crease finishing liquor.

Effect of various softeners on a resin-treated viscose rayon fabric

E. A. Murray. *Am. Dyestuff Reptr. 44:* P141-P150 (February 28, 1955).

The studies described in this paper were undertaken to evaluate the effect of the ionic nature of the softener on fabric physical properties. A single piece of spun viscose gabardine shirting was treated at several concentration levels with each of the following softener types: nonionic, anionic, cationic, pyridine. The effect of the softeners was evaluated both before and after laundering. Some interesting differences in physical properties of the fabrics attributable to softener type were found. Only the cationic and pyridine softeners produced major changes in fabric hand. Stiffness changes in the softener-treated materials, moreover, were detectable only at the higher concentrations of the pyridine softener. Measureable effects due to softener treatment were found in tear strength, flat abrasion resistance, sewability, and coefficient of friction. 15 references.

Non-felting wool: some recent interesting developments. Part 2

B. C. M. Dorset. *Textile Mfr. 81:* 88-91 (February, 1955).

Future progress may be in the direction of using aqueous solutions or dispersions either of resins capable of coating the surface of each wool fiber to mask its peculiar uni-directional roughness or of chemicals reactive with the epithelial scales and capable of modifying these so that they can no longer promote felting.

Impregnation of fabrics with plastic dispersions

H. Anders. *Textil-Praxis 9, No. 9:* 876-878 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 980 (1954).

The impregnation of cotton fabrics with five emulsions of synthetic polymers at 22°C was examined as a function of time, concentration and pH value of the plastic dispersions. The proofing properties were determined by measuring the weight increase of the fabric due to the absorption of emulsion and dry solids, respectively.

Photochemical degradation of delustred and non-delustred cellulose fibers

A. Agster. *Melliand Textilber. 35, No. 11:* 1209-1212 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 101 (1955).

It has been pointed out in a previous publication that fibers delustred with titanium dioxide are more rapidly degraded by sunlight and that factors such as the reactivity of the fibrous material, the presence of foreign substances acting as catalysts, etc., affect the degradation. Experiments carried out at pH values of 3, 5, 7, 9 and 11 have now shown that metals, for example, iron and copper (particularly the former), have a catalytic effect on the photochemical degradation; this effect can be largely eliminated by conversion of the salts into insoluble precipitates or by complex-salt formation. The values for the mean degree of polymerization, measured by the nitrate method, are lower by 15-20 per cent in delustred fibers.

Practical piece goods mercerizing

S. M. Edelstein (Dexter Chemical Corp.). *Textile Ind. 119:* 112-123 (March, 1955).

The practical questions that come up most frequently are asked and answered.

Dungler process of continuous bleaching

Textile Recorder 72: 81-82 (February, 1955).

The use of superheated steam is a feature of this open width continuous sodium chlorite bleaching range.

Tar spots in finishing

Textile Ind. 119: 94-95 (March, 1955).

Two different methods of wet processing removal are outlined.

DYEING AND PRINTING D 2

Carrying developmental work through to plant vat dyeing procedures. Part 3. Naphthols or azoics

F. O. Stone. *Textile Bull. 81:* 85-91 (February, 1955).

This article attempts to bring out pertinent operating factors for locating trouble spots in naphthol processing and dyeing operation and how they may be partially eliminated, or at least kept to a minimum.

Dyeing characteristics of different wool grades

W. F. Brommelsiek, W. von Bergen and H. E. Millson. *Am. Dyestuff Reptr. 44*: P73-P86 (January 31, 1955).

The dyeing properties of four wools were studied: an Australian Fine, a New Zealand Medium, Domestic Fine and Domestic Medium. Dyeings conducted from pieces made from these four wools showed considerable spread in depth of shade. The analyses revealed that these shade differences are directly related to the fiber fineness. One wool-grade difference is equal to a five-percent difference in the depth of shade. Dyeing studies were also made on top as well as on individual staples. 7 references.

Fiber damage during discharge printing

H. Rath and J. Rau. *Melliand Textilber. 35, No. 10:* 1125-1130 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 27 (1955).

The causes of fiber damage occasionally occurring in discharge printing are investigated, and it is shown that tendering of the fiber is due to the action of humidity on Rongalit-containing prints, before or after steaming, especially at increased temperature. The damage is of an oxidative nature, but it may be accompanied (in the case of neutral discharging) by hydrolytic degradation, and can be prevented by addition of an antioxidant and an acid-binding agent that neutralizes any acid substances formed. The printed cloth should not be stored for prolonged periods before steaming or (after steaming) before finishing. The temperature and humidity of the cloth pile and surrounding atmosphere should be as low as possible, and the steaming carried out with exclusion of air if possible.

Investigation into the use of diammonium phosphate in the dyeing of Dacron and Dacron-wool blends

G. W. Spicer (Textile Aniline & Chemical Co.). *Am. Dyestuff Reptr. 44:* P87-P88 (January 31, 1955).

The use of the sodium salt of orthophenylphenol has proven effective as a dye carrier in dyeing Dacron polyester fiber, especially the Dacron of wool-Dacron blends. The use of diammonium phosphate for converting the water-soluble form to the insoluble orthophenylphenol is described. This method has proven advantageous in dyeing a wide range of shades on piece goods by a simple and controllable one-bath process. The information described was gathered from experience with actual mill productions as well as from laboratory experiments.

The Sandocryl process for dyeing polyacrylonitrile fibers by the cuprous ion method

W. Flugel, A. Peter and H. Egli. *Textil-Rundschau 9, No. 10:* 509-514 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 973 (1954).

The Sandocryl dyes, belonging to the anthraquinone series, have been developed for dyeing polyacrylonitrile fibers by the Sandocryl process (patent applied for in all countries by Sandoz AG). The process is based on the absorption of selected acid dyes from acid bath in presence of cuprous ions, which are formed in the bath by reduction of copper sulfate with hydroxylammonium sulfate, sodium bisulfite or glyoxal. The dyeings are claimed to be fast to light and to washing at 70°C. The dyes, a selection of which is listed, give very pure tints as compared with many azo dyes which can be also used in the Sandocryl process.

New aspect in roller printing

VEB Textil Maschinenbau, Germany. *Skinner's Silk and Rayon Record 29:* 160-161 (February, 1955).

Features of the Textima roller printing machine are described. The rollers are arranged one above the other. Instead of the central cylinder, every roller has its own small cylinder. The pressure can be adjusted and can be measured by gauges arranged at the two ends of the cylinder. The pieces enter the machine from above.

New developments in vat-dye printing

A. K. Saville (E. I. du Pont de Nemours & Co., Inc.). *Am. Dyestuff Reptr. 44:* P105-P107 (February 14, 1955).

The outstanding development in the field of vat dye printing is the modification of conventional methods of vat dye fixation to improve color yields and thereby reduce printing costs. Vat dyes are printed from neutral vehicles; the fabric is then impregnated with a caustic alkali-sodium hydrosulfite reducing system, and continuously steamed. Surprising economies in dyes and chemicals are achieved. The influence of various impregnation techniques, as well as the effect of time and conditions of steaming on the quality of print and dye yield, are discussed. Advantages of these techniques and their possible impact on the printing industry are noted.

Screen printing on acetate

E. B. Simpson (British Celanese Ltd). *Dyer 113:* 227-233 (February 4, 1955).

Screen preparation and use, as well as a survey of important styles.

MECHANICAL PROCESSES D 3

Considerations on the raising machine

H. Stossimmel and A. Kaehs. *Melliand Textilber. 35, No. 11:* 1290-1291 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 97 (1955).

The author points out the necessity of providing raising machines with recording devices for the cloth speed and the speed of the pile and counter-pile rollers. These devices show on mobile scale discs of the raising rollers the zero point at which no raising effect is obtained.

Speed and adjustment of the raising rollers of raising machines

C. Richter. *Textil-Praxis 9, No. 9:* 868-871 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 982 (1954).

The mechanism of raising machines is explained. The raising effect of the pile roller and counter-pile roller are expressed by equations. Equations are also given for calculating the speeds of the various rollers and a diagram is shown from which the raising effect can be read off for each cloth speed and each position of the cone belt (indicating the speed of the raising rollers).

DRYING D 4

High production shrinking machine

Sucal Ltd. *Textile Recorder 72:* 87-89 (February, 1955).

The Sucaltex machine operates on the principle of the passage of tensionless fabric through a specially designed steam chamber followed by infra-red drying and finally cold setting and fabric stabilization through the medium of high velocity air impact. Diagrams. Photograph.

Stenter selvage guide with photoelectric control

I. A. Fedorov. *Textil. Prom. 14, No. 8:* 53-54 (1954); *in Russian.* Through *Brit. Cotton Ind. Research Assoc. 35:* 97 (1955).

The device, for use on stenters and drying machines, consists of two photo-electric holders controlling the movement of the fabric selvage, a straightening mechanism, and an automatic electric drive for the straightening mechanism. An illustration is given and the device is described.

TESTING AND MEASUREMENT E

Electronic industrial instrumentation in textile mills

L. Walter. *Textile Mfr. 81:* 92-97 (February, 1955).

A survey of some electronic instrumentation developments of the past ten years and their application to the textile industry.

Nomographic methods in quality control

J. Fischer and U. Liebscher. *Textil- u. Faserstofftech. 4, No. 10:* 577-580 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 98 (1955).

The statistical method of determining the variation coefficient and nomographic calculation of the results are discussed and illustrated by examples, with particular reference to the use of special slide rules.

Recent developments in electron microscopy

V. E. Cosslett. *Research 8:* 48-56 (February, 1955).

51 references.

The time-counter system Peiseler

H. Koblanck. *Textil-Praxis (English ed.) No. 4:* 181-185 (November, 1954).

A new automatic instrument is presented, permitting the counting of frequencies and duration of machine stops, as in a loom-stop study.

FIBERS E 1

Heat-retaining power of clothing and simple apparatus for testing thermal-insulation properties of textile fibers

W. Junges. *Textil- u. Faserstofftech. 4, No. 9:* 515-516; *No. 10:* 581-583 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 102 (1955).

The three types of heat exchange (convection, conduction and radiation) are discussed, and present methods of determining the heat-retaining capacity of textile raw materials and products are reviewed. A simple method developed by the author is described, in which the fibers to be tested are embedded in a solid medium (paraffin) to exclude convection, and the measurement is

carried out in a stationary state. The apparatus used is described and equations are given for calculating the heat conductivity value of the textile material. 21 references.

Laboratory equipment and method for making nep tests on cotton samples

J. T. Rouse, G. E. Gaus and F. Carpenter. Washington: U. S. Dept of Agriculture, 1954. 22p. Through *Brit. Cotton Ind. Research Assoc. 35:* 100 (1955).

The machine consists of a feed roll, a feed plate, a carding cylinder, a carding flat, a doffing cylinder, and a doffing comb; it will process a 3 g sample of cotton to produce a continuous web 4 inches wide, and sufficient web is produced to provide 10 specimens for nep evaluation on 4 inch x 9 inch boards. The reproducibility of the results is calculated to be within a standard error of approximately 3 neps per 100 square inches of web.

Measurement of fiber friction and its application to drafting force and fiber control calculations

D. S. Taylor (Wool Industries Research Assoc.). *J. Textile Inst. 46:* P59-P83 (January, 1955).

The paper describes the measurement of fiber friction by withdrawing single fibers from a sliver, and shows how the results can be used to predict the drafting force. An examination of the problem of fiber control shows that the understanding of drafting requires an intimate knowledge of the forces acting at the contact between individual fibers. This information is not provided by the technique described when the fibers possess the characteristic of differential friction. 22 references.

Paper chromatography in fiber research

D. B. Das. *Indian Textile J. 65:* 156-161 (December, 1954).

A discussion of the use of paper chromatography in determining the structure of various fibers. 103 references.

Relation between fiber friction and the behavior of fibers and yarns during processing

H. L. Roder. *J. Textile Inst. 46:* P84-P100 (January, 1955).

A brief description is given of the measuring methods used for determining the coefficients of static and dynamic friction of individual fibers and the coefficient of kinetic friction of yarns. After some general remarks on the possibility of finding correlations between single fiber friction values and the behavior during processing, some examples are given for the following cases: (a) handle of fibers, (b) carding on the cotton system; in addition, data are given for the sliver strength, (c) drawing on the cotton system, (d) carding and drawing on the worsted system, (e) tow-to-yarn process, (f) behavior of yarn packages, and (g) behavior of tire yarn, particularly the twisting of cord.

Relationships between the tensile strength of a fiber bundle and that of single fibers or filaments

F. Winkler. *Faserforsch. u. Textiltech. 5, No. 9:* 398-403 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 983 (1954).

It is shown that the frequency distribution of multiple length can be calculated from the frequency distribution of the strength values for single fibers or filaments by means of the theories of Peirce or Weibull. It is also possible to use the calculation for several parallelly-stretched fibers or filaments, if the product from fiber number and actual test length is used as test length. Experimental results are in good agreement with the theoretical values. 18 references.

YARNS E 2

Causes of irregularity in doubling of slivers and ribbon laps

W. Wegener and J. Delventhal. *Z. ges. Textil-Ind. 56, No. 21:* 1265-1269 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 16 (1955).

The importance of checking periodically the individual pieces of machinery is pointed out, especially with regard to the agreement between the calculated and practical draft values. Any deviations between these values indicate faulty machine operation which may be the cause of irregularities in the material processes. Examination of the ribbon lap machine has shown that the regularity of the ribbon lap depends mainly upon the looseness degree of the sliver fed, the adjustment of the individual drafts, and the load applied to the top rollers (satisfactory gripping effect).

Determination of irregularity in slivers, rovings, yarns and twists in the high-frequency condenser field

Swiss Standards Assoc. *Textil-Rundschau* 9, *No. 10:* 528-530 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 989 (1954).

The Standard Specification SNV 97 420 comprises the measuring principles, definitions for the symbols used in the equations given, apparatus, sampling and preparation of the samples, testing method, and evaluation of the test results.

Filling-control system

M. London. *Textile World 105:* 138-139 (March, 1955).

A filling-tension analyzing instrument combined with a system for checking looms regularly is described and is claimed to decrease seconds, cut reed and shuttle replacement, and lower yarn waste.

Frictional properties of nylon yarn and their relation to the function of textile guides

M. E. Baird and K. W. Mieszkis (British Nylon Spinners Ltd.). *J. Textile Inst. 46:* P101-P111 (January, 1955).

This paper describes the measurement of the kinetic coefficients of friction between guides and nylon yarns in relation to the speed of the running yarn, the tensions in the yarn, the materials of the guides and the smoothness of their surfaces, the twist in the yarns, titanium dioxide content and the effects of lubricants and sizes. The results show that for high-twist multifilament yarns the smoothest guides give rise to the lowest frictional forces. For low-twist multifilament yarns and monofilaments, guides with rougher surfaces are essential if the coefficients of friction are to be kept low. 10 references.

Measurement of forces in twisted wool rovings

G. Brook and M. Hannah (Univ. of Leeds). *J. Textile Inst. 46:* P23-P40 (January, 1955).

A description is given of an apparatus which may be used to study the rheological behavior of twisted rovings. Results are reported of a first survey of the effect of twist and speed on load-extension properties. The work was done on a three dram, 64s Australian Merino having a 4 per cent oil content. 9 references.

On the determination of the B-L curve by cutting and weighing

S. B. Bandyopadhyay. *(Letter to the editor). J. Textile Inst. 46:* T63 (January, 1955).

Simplification of yarn numbering: preparation for the introduction of the international numbering of yarns in Germany

K. Hentschel (German Textile Standardization Committee). *Textile Research J. 25:* 140-143 (February, 1955).

Synthetic fibers on speed frames

R. McIntyre. *Textile Wkly. 55:* 332-333 (February 4, 1955).

Empirical formulas and tables are developed for density in relation to lifting rate when producing cotton, wool and various synthetic rovings.

The universal Frenzel-Hahn yarn regularity tester

W. Bobeth. *Faserforsch. u. Textiltech. 5, No. 9:* 404-411 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 989 (1954.)

Recent publications referring to the use of the yarn tester (methods for the evaluation of stress-elongation curves, fatigue tests, further potential uses, and standardization of testing techniques) are reviewed. 10 references.

FABRICS E 3

AATCC rapid control tests: simplified tests for fabric properties

T. G. Hawley (United Merchants Laboratories, Inc.). *Am. Dyestuff Reptr. 44:* P114-P115 (February 14, 1955).

Tests of consumer fabrics are important to mills, converters, retailers and consumers. However, since many responsible for consumer fabrics have neither the laboratory equipment nor the time to carry out full testing methods, it is desirable to have simplified methods that require very little time or specialized equipment. The simplicity of the methods given is explained.

An attachment to a dial-gauge thickness meter for measuring average thickness

R. F. Blackwell. *J. Sci. Instr. 31, No. 9:* 342 (1954). Through *Brit. Cotton Ind. Research Assoc. 35:* 76 (1955).

The attachment has four points of contact with the material whose thickness is measured, and is so designed that the reading on the dial is the average of the four thicknesses.

Automatic fabric inspection equipment

Lindly Instrument & Machine Corp. *Textile Ind. 119:* 155-156 (March, 1955).

The basic machine consists of a series of interlocking detecting feelers that detect raised defects in fabric as it is passed beneath them. Features include a lighting unit, automatic marking attachment, mispick detector and recorder, grader, and counter.

Flammability testing of clothing textiles

G. S. Buck, Jr. (National Cotton Council of America). *Am. Dyestuff Reptr. 44:* P115-P116 (February 14, 1955).

The author discusses how textile-testing methods can become the bases for Federal laws, taking as a particular example the flammability test method of the AATCC. He first gives a history of the development of flammability testing, and then points out how carefully the work on a method must be conducted if it might later be formalized into law. He especially emphasizes that the research must be carried out slowly and surely by broadly representative committees. He concludes that testing methods cannot exactly duplicate actual use conditions, and that standards of procedure are to be preferred over standards of performance.

INDUSTRIAL ENGINEERING F

Cost accounting in the textile industry Part 3

K. R. Aravamuthan. *Indian Textile J. 65:* 89-93, 98 (November, 1954).

See *TTD 11:* 496 (November, 1954).

Productivity in the cotton industry

L. H. C. Tippett (British Cotton Ind. Research Assoc.). *Textile Merc. 131:* 769-772, 775 (October 29, 1954); 815-818 (November 5, 1954); 857-858 (November 12, 1954).

Some impressions from a Shirley Institute survey of 50 spinning and weaving mills. Part 1: Achievements and prospects. Part 2: Work study in the mill. Part 3: Influence of the trade unions.

WASTE DISPOSAL F 2

The recovery of wool wax from wool scour liquors

L. F. Evans and W. E. Ewers. *Aust. J. Applied Sci. 4:* 552-580 (1953). Through *Water Pollution Abstr. 28:* 31 (January, 1955).

A process has been developed for the recovery of wool wax from scour liquor, consisting of a solution of soap containing sodium carbonate. The liquor is aerated in flotation cells, and the froth is recirculated through the impellers of the cells to make the wax in the froth more granular and the froth less bulky. The froth is then washed in a counterflow of water and the washed and drained concentrate, containing 20 per cent wax, is dispersed in an alkaline medium to give an emulsion from which good quality wool wax is obtained by centrifuging. For a scour liquor containing 1.5 per cent wax a recovery of 48 per cent would be typical of this treatment. The process is being used on a commercial scale and could probably be equally well applied to scour liquors consisting of synthetic detergents. In an appendix a method of analyzing scour liquors for wax, soap, and insoluable dirt is given in detail.

Study of waste waters from dyeworks

E. Leclerc (Centre Belge D'Etudes et de Documentation Des Eaux). *Bull. Centre belge Et. Document Eaux No. 23:* 39-51 (1954). Through *Water Pollution Abstr. 28:* 30 (January, 1955).

The characteristics of the various types of waste waters from the textile industry are described and methods of treatment are reviewed with reference to previous studies as described in the literature. Preliminary studies of the waste

waters from a works engaged in the bleaching and sizing of cotton and linen are reported. The effluent is settled in five sedimentation tanks in series before discharge at a rate of 550 cu. m. per hour to the river Lys. Analysis of samples taken from the spillway to the river revealed no significant variations in the character of the effluent during the day. The effluent satisfies the conditions for discharge to a 3rd-class (industrial) river in everything except amount of settleable solids which slightly exceed the limit. The waste waters becom reoxygenated in the first sedimentation tank. Sedimentation reduces the B.O.D. of the waste waters from 270 mg to 111 mg per liter. The B.O.D. of the river water is increased by 20 per cent by the discharge of the effluent; it is already heavily polluted at this point by other trade waste waters. Results of experiments on the harmfulness of the waste waters to fish are given in tables.

QUALITY CONTROL F 3

Modern mill controls. Part 2. How the control program operates

N. L. Enrick. *Modern Textiles Mag. 36:* 50-58 (February, 1955).

Discusses the establishment and operation of a control program for quality, waste, production, and maintenance in a modern textile mill. Organization charts, administrative procedures, testing frequencies and schedules, production control reports, and waste analysis and reports are presented, utilizing examples from cotton, wool, and filament application.

OTHER F 4

Work study applied to a braiding department

M. A. J. Muckle. *Time and Motion Study 3, No. 10:* 13-18 (1954). Through *Brit. Cotton Ind. Research Assoc. 35:* 115 (1955).

Reduced waste

W. A. Thomason, Jr. *Textile World 105:* 84-85, 180-183 (February, 1955).

A successful waste-control program needs good supervision, good housekeeping, and education of operators and supervisors. Waste can be saved (1) in opening with rake controls to eliminate choke-ups, (2) in carding with waste standards, and (3) in spinning by creeling at the correct time.

SCIENCES G

CHEMISTRY G 1

Block and graft copolymers. Part 1

L. Valentine. *Fibres 16:* 12-16 (January 1955).

The nature of ordinary copolymers, and the differences between these and the new types, is outlined.

Block and graft copolymers. Part 2. Methods of preparation

L. Valentine. *Fibres 16:* 60-63 (February, 1955).

Mechanical properties of high polymers. Part 1

P. C. Scherer and S. N. Chinai. *Modern Textiles Mag. 36:* 74-76 (January, 1955).

A study of molecular weight distribution curves of a vinylite acetate, type AYAF of medium viscosity whose average degree of polymerization was determined to be 1262 and whose distribution curve was shown to be a very broad one.

Mechanical properties of high polymers. A study of molecular weight distribution curves. Part 1. Polyvinyl acetate (continued)

P. C. Scherer and S. N. Chinai. *Modern Textiles Mag. 36:* 48, 66, 80-82 (February, 1955).

Color constitution and properties

A. F. Schneid. *Interchemical Rev. 13:* 101-114 (Winter 1954-55).

In this article, the author reviews theories relating the fastness properties of colors to their chemical structure. 24 references.

Formaldehyde: multi-purpose finishing chemical

A. J. Hall. *Fibres 16:* 17-21 (January, 1955).

Outlines some of the many uses of this important chemical, including its application to cellulosic and protein fibers and its place in textile chemicals and auxiliaries.

Some applications of organic isocyanates

G. S. J. White. *J. Soc. Dyers Colourists 70:* 481-486 (November, 1954).

The preparation, properties, and reactions of organic isocyanates are touched upon. There follows a review of their uses as adhesives, in lacquers, and in textile finishing. Other developments mentioned include the manufacture of elastic and rigid sponges and rubbers. 16 references.

Cotton quality study. Part 3. Resistance to soiling

N. F. Getchell (National Cotton Council of America). *Textile Research J. 25:* 150-194 (February, 1955).

The purpose of this report is to review the present knowledge in the field of soil, soiling mechanisms, methods of measurement, and soil resistant treatments, indicating the potential markets for improvement; to discuss the technical factors involved; and to point out some unanswered questions with suggestions for further research. 131 references. Previous papers in this series appeared in the April and November 1949 issues of the *Textile Research Journal.*

Drycleaning techniques and the work of the AATCC committee on drycleaning test methods

A. E. Johnson (National Institute of Drycleaning). *Am. Dyestuff Reptr. 44:* P108-P111 (February 14, 1955).

The washing process. Part 10. The washing process in the electron microscope

E. Gotte, W. Kling and H. Mahl. *Melliand Textilber. 35, No. 11:* 1252-1257 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 103 (1955).

The washing process was studied electron microscopically on cotton and wool by varying the type of soil and the concentration of the detergent and auxiliaries, respectively, as well as the number of washings and duration of the process. It was found that the brightness increases during washing with decreasing number of dirt particles on the fiber surface. The coarser particles are washed off first; their removal becomes more difficult at a diameter below 0.2 μ. When no more soil particles are detected under the electron microscope, the fiber is also macroscopically clean. Migration of the dirt into the center of the fiber and its occlusion between the fibrils or fiber molecules apparently does not take place.

Mechanism of detergents

H. L. Rosano. *Teintex 19, No. 8:* 577-587 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 913 (1954).

Physico-chemical factors affecting the detergency mechanism were studied (1) tensiometrically and (2) by observing the behavior of drops of oil on a solid immersed in water and in an aqueous detergent solution, respectively. The results obtained show (a) that, for detergents in aqueous solutions, the mechanical action seems to be reduced to an emulsifying activity facilitated by the presence of the detergent (decreases of tension at the oil/aqueous detergent solution interface as compared with that of oil/pure water). The physical action of the detergent itself is limited, a macroscopic layer of residual dirt being left which can be displaced only by the chemical action of the mineral salts in the detergent composition. (b) The ionic sign of the detergent plays an important role in the re-deposition of the emulsified dirt.

Testing the wash effect as a function of the time

M. Rosch. *Melliand Textilber. 36:* 58-63 (January, 1955); *in German.*

As already determined by other authors, the optimum washing effect is found to be achieved with a time of 6-10 minutes. Interesting results in acidic wool scouring are provided by the use of anion-active and non-ionic detergents, and also by the addition of salt. Pigment soiling and oil soiling give results which are similar but have different effects.

PHYSICS G 2

Air conditioning and electrostatic charges in worsted spinning mills

W. Wegener and W. Sprenkmann. *Melliand Textilber. 36:* 20-24 (January, 1955); *in German.*

The first part of this paper describes an experimental device for determining in the laboratory the relationship between the build-up of electrostatic charges in the air by air-conditioning and its influence upon the electrostatic charges on the fiber. The second part discusses investigations carried out in a worsted spinning mill on the relationships between electrostatic charges in the air of the working rooms, the relative atmospheric humidity, the build-up of electrostatic charges on the material, and the number of sliver and thread breakages, e.g. the number of sliver and thread breakages as a function of the humidity content and the electrostatic charge of the material, and the latter as a function of the time.

Nuclear magic and textile fibers

H. Rutherford. *Textile Forum 12:* 9-11, 28 (December-January, 1954-55).

The research program at North Carolina State School of Textiles to determine the effects of radiation on approximately 30 different synthetic fibers is described.

Static electricity in textiles

K. H. Barnard (American Cyanamid Co.). *Am. Dyestuff Reptr. 44:* P111-P113 (February 14, 1955).

The impact of static electricity in textiles on both the average consumer and the processor of textiles is discussed. Some cures are indicated. The evaluation of antistatic treatments by resistivity measurements is recommended by a Research Committee of AATCC.

BIOLOGY G 3

Microbiology of cellulose-containing textiles. Part 3. Detection of microbial damage on cellulose fibers

H. Ostertag. *Melliand Textilber. 35, No. 9:* 967-969 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 945 (1954).

Methods for quantitative determination of the fiber damage caused by microbial attack and investigations into the preferential regions of attack are reviewed.

Permanent protection of cellulosic textiles against micro-organisms

C. Zuber and L. Marcou. *Bull. Inst. Textile France No. 47:* 69-91 (June, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 942 (1954).

In this review, the author discusses the micro-organisms which attack textiles (bacteria, actinomycetes and fungi) methods of testing resistance to micro-organisms (seeding and ground-burial methods), and the main processes for proofing cellulosic fibers against the attack of micro-organisms (modification of the chemical nature of the fiber, inactivation of the enzymes, creation of a barrier between the micro-organisms and the fibers, and destruction of the micro-organisms by phenol derivatives, quaternary ammonium compounds, metallic complexes other than those of copper, or copper complexes). 26 references.

MISCELLANY H

Textiles and the chemical industry

R. W. Philip (Callaway Mills Co.). *Ind. Eng. Chem. 47:* 437-443 (March, 1955).

This paper forms part of a symposium "Resources for the chemical industry in the United States: South Atlantic States", presented in September 1954 by the Division of Chemical Marketing and Economics of the American Chemical Society. The chemical revolution in the textile industry and its effect on the textile industry of the South Atlantic States is examined. 95 references.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

YARN PRODUCTION B

Controlling of electric motors of the induction type

R. J. Logan (to Tweedales & Smalley (1920) Ltd). BP 713 945, August 18, 1954. Through *BCIRA 35:* 55 (1955).

Process for the production of a sliver of staple fiber from a traveling tow of filaments

C. W. Revell (to Imperial Chemical Industries Ltd). BP 716 043, September 29, 1954. Through *BCIRA 35:* 52 (1955).

Machine for paying out and delivering parallel lengths of thread

R. W. Polley (to Nashua Corp.). USP 2 692 635, October 26, 1954.

Process for binding skeins

E. Haug (to Schachenmayr, Mann & Cie). USP 2 702 426, February 22, 1955.

Transmission for textile lapping machines

D. F. Ringie (to James Hunter Machine Co.). USP 2 690 679, October 5, 1954.

OPENING, PICKING, FIBER PREPARATION B 1

Apparatus for use in conveying and opening textile fibrous materials

W. A. Hunter and F. Singleton (to T. M. M. (Research) Ltd). BP 715 413, September 15, 1954. Through *BCIRA 35:* 53 (1955).

Machines for the opening treatment of asbestos

J. J. Denovan and R. A. Denovan. BP 715 418, September 15, 1954. Through *BCIRA 35:* 53 (1955).

Apparatus for blending fibers

O. W. Greene, R. W. Twitty and T. L. Richie (to Textile Equipment Corp.). USP 2 703 438, March 8, 1955.

CARDING AND COMBING B 2

Variable speed positive stripper drive for carding engines

L. G. Crowther. BP 713 738, August 18, 1954. Through *BCIRA 35:* 53 (1955).

Card or garnett feeder

A. R. Jee and S. Harwood (to G. S. Harwood and Son). USP 2 702 177, February 15, 1955.

Carding machine means for producing irregular yarns

M. C. Dole, II and P. R. Campton (to the Firth Carpet Co.). USP 2 703 439, March 8, 1955.

DRAWING AND ROVING B 3

Cellular rubber for drafting roller cots and aprons

M. Balkin (to George Angus & Co. Ltd). BP 716 021, September 29, 1954. Through *BCIRA 35:* 54 (1955).

Removable top roller weighting arm for roller drafting mechanisms

J. Noguera (to Casablancas High Draft Co. Ltd). BP 715 533, September 15, 1954. Through *BCIRA 35:* 53 (1955).

Stop motions for gilling and like textile machines

E. Pearson (to Electrical Products (Colne) Ltd). BP 714 936, September 8, 1954. Through *BCIRA 35:* 54 (1955).

Top roller weighting system

J. Noguera (to Casablancas High Draft Co.). BP 715 534, September 15, 1954. Through *BCIRA 35:* 54 (1955).

SPINNING, WINDING, TWISTING B 4

Bolster bearings for spinning mule spindles

A. H. Maytum and J. B. Haigh. BP 713 739, August 18, 1954. Through *BCIRA 35:* 55 (1955).

Filter box with built-in fan for exhaust installations of spinning machines

H. Thoma (Germany). BP 715 195, September 8, 1954. Through *BCIRA 35:* 55 (1955).

Means for mounting bobbins or the like on spindles of textile twisting or spinning machines

C. Fitton (to William Bodden & Sons Ltd). BP 716 045, September 29, 1954. Through *BCIRA 35:* 54 (1955).

Mechanism for twisting yarns to form a ply construction

H. L. Martyn (to Courtaulds Ltd). BP 713 682, August 18, 1954. Through *BCIRA 35:* 56 (1955).

Spinning and twisting rings of aluminum or aluminum alloy

J. J. Rieter & Cie AG (Switzerland). BP 716 085, September 29, 1954. Through *BCIRA 35:* 55 (1955).

Synthetic resin ring traveler

J. J. Rieter & Cie AG (Switzerland). BP 714 969, September 8, 1954. Through *BCIRA 35:* 55 (1955).

Textile ring spinning frames

N. Hooper (to Tweedales & Smalley (1920) Ltd). BP 715 802, September 22, 1954. Through *BCIRA 35:* 54 (1955).

Thread suction devices for spinning frames

H. Buhler-Krayer (Switzerland). BP 715 873, September 22, 1954. Through *BCIRA 35:* 55 (1955).

Clearer for long-draft spinning aprons

P. D. Poovey (to Glenn Mills, Inc.) USP 2 703 440, March 8, 1955.

Marking device for bobbin winding machines

K. W. Ballard (to West Point Mfg. Co.). USP 2 702 164, February 15, 1955.

YARNS B 5

Yarn package

W. A. Biggs, Jr. and W. S. Adams (to Sonoco Products Co.). USP 2 702 167, February 15, 1955.

FABRIC PRODUCTION C

Method for forming fibrous mats

G. M. Lannan (to Owens-Corning Fiberglas Corp.). USP 2 702 069, February 15, 1955.

WARPING, SLASHING, YARN PREPARATION C 1

Creels for supporting bobbins

C. H. Baddeley. BP 715 955, September 22, 1954. Through *BCIRA 35:* 57 (1955).

Detector stop motion for creels

E. Pearson and A. Whittaker. BP 715 891, September 22, 1954. Through *BCIRA 35:* 57 (1955).

Means for filling a container with weft pirns

Maschinenfabrik Schweiter AG (Germany). BP 713 480, August 11, 1954. Through *BCIRA 35:* 58 (1955).

Method and device for regulating thread tensions in winding devices

Barmer Maschinenfabrik AG (Germany). BP 713 449 and 713 450, August 11, 1954. Through *BCIRA 35:* 58 (1955).

Pirns and bobbins

F. B. Mercer (to Wilson Brothers Bobbin Co. Ltd). BP 716 036, September 29, 1954. Through *BCIRA 35:* 58 (1955).

Sectional warping machine with vertically-adjusted guide reed

Maschinenfabrik Benninger AG (Switzerland). BP 715 830, September 22, 1954. Through *BCIRA 35:* 57 (1955).

Tensiometers for warps

E. Cotterill and D. E. Felks (to Courtaulds Ltd). BP 715 559, September 15, 1954. Through *BCIRA 35:* 57 (1955).

Thread tensioning apparatus

A. A. Atkins (to Courtaulds Ltd). BP 713 461, August 11, 1954. Through *BCIRA 35:* 57 (1955).

Apparatus for depositing wound yarn packages into a magazine

F. Voegelin (Maschinenfabrik Scharer, Switzerland). USP 2 703 669, March 8, 1955.

Bobbin skewer

J. F. Leaver. USP 2 702 675, February 22, 1955.

Cold water dispersible starch sizes and process of making them

R. W. Kerr and W. J. Katzbeck (to Corn Products Refining Co.). USP Reissue 23 952, February 22, 1955.

Warp tension apparatus for slashers

L. F. Frye. USP 2 702 934, March 1, 1955.

WEAVING C 2

Apparatus for supporting and tensioning selvage threads in looms for weaving

C. H. Baddeley. BP 715 758, September 22, 1954. Through *BCIRA 35:* 62 (1955).

Appliances on looms for moving the heddle shafts

Gebr. Staubli & Co. (Switzerland). BP 713 185, August 4, 1954. Through *BCIRA 35:* 61 (1955).

Circular weaving loom

G. Casati and C. Cazzaniga (Italy). BP 713 183, August 4, 1954. Through *BCIRA 35:* 59 (1955).

Circular weaving looms

J. P. Marin (Spain). BP 715 731, September 22, 1954. Through *BCIRA 35:* 59 (1955).

Current supply means for weft stop motions of circular looms

Saint Frères Soc. anon. (France). BP 716 056, September 29, 1954. Through *BCIRA 35:* 59 (1955).

Fabric tensioning means for looms

H. K. Taylor. BP 713 745, August 18, 1954. Through *BCIRA 35:* 62 (1955).

Heddle shafts for looms

Grob & Cie AG (Switzerland). BP 715 921, September 22, 1954. Through *BCIRA 35:* 61 (1955).

Loom pickers

O. McGaughney. BP 716 120, September 29, 1954. Through *BCIRA 35:* 60 (1955).

Loom with a stationary weft supply

K. Kubelka (to Prototypa Nar. pod., Czechoslovakia). BP 716 041, September 29, 1954. Through *BCIRA 35:* 59 (1955).

Machine for rectifying shuttles for weaving

Gordon Warin, Ltd. BP 713 172, August 4, 1954. Through *BCIRA 35:* 60 (1955).

Mechanical motion for use in connection with loom jacquards

J. C. Dean. BP 713 321, August 11, 1954. Through *BCIRA 35:* 61 (1955).

Mechanism for driving the lay of a loom

A. S. C. Hart. BP 715 048, September 8, 1954. Through *BCIRA 35:* 61 (1955).

Method for weaving carpets and other textile fabrics with a pile

S. S. C. Fleischer and C. C. Thomsen. BP 715 741, September 22, 1954. Through *BCIRA 35:* 62 (1955).

Pickers for underpick looms

H. Hargreaves. BP 715 309, September 8, 1954. Through *BCIRA 35:* 61 (1955).

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Self-threading means for a shuttle to be used with automatic weft-replenishing looms

F. W. Latham (to Thomas C. Keay Ltd). BP 716 179, September 29, 1954. Through *BCIRA 35:* 60 (1955).

Propulsion mechanism for propelling shuttles in circular weaving looms

Y. Latieule (to Comptoir Linier, France). BP 715 494, September 15, 1954. Through *BCIRA 35:* 60 (1955).

Selvage heddle frames for mails of looms for weaving

C. H. Baddeley. BP 715 819, September 22, 1954. Through *BCIRA 35:* 61 (1955).

Shuttle brake mechanism for looms

Telares Casals Duran Soc. Anon. (Spain). BP 713 852, August 18, 1954. Through *BCIRA 35:* 60 (1955).

Shuttle for circular weaving looms

Y. Latieule (to Comptoir Linier, France). BP 715 495, September 15, 1954. Through *BCIRA 35:* 59 (1955).

Shuttles for looms for weaving

J. Sim and W. Sim (to Thomas Dawson (Shuttlemakers) Ltd. and Boardman & Baron Ltd). BP 715 711, September 22, 1954. Through *BCIRA 35:* 60 (1955).

Weft feelers for looms

E. Ball (to Meters Ltd). BP 713 486, August 11, 1954. Through *BCIRA 35:* 61 (1955).

Filling end parting and clamping mechanism

W. E. Lundgren (to the Bullard Clark Co.). USP 2 702 055, February 15, 1955.

Loom knockoff means

M. R. Flamand (to Draper Corp.). USP 2 703 590, March 8, 1955.

Mechanism for transferring idle shuttles to a return conveyer in looms for weaving

E. Pfarrwaller (to Sulzer Freres, Societe Anon., Switzerland). USP 2 702 054, February 15, 1955.

Method of making sweepsticks

L. R. Heim (to the Heim Co.). USP 2 701 907, February 15, 1955.

Selvage thread feeding means for looms

G. T. Allenson (to Draper Corp.). USP 2 703 587, March 8, 1955.

Support for shifting shuttle boxes

R. F. Dion and P. A. Nims (to Crompton & Knowles Loom Works). USP 2 703 589, March 8, 1955.

Weaving loom clamp

D. E. Houghton (to New York Wire Cloth Co.). USP 2 702 566, February 22, 1955.

Support for shifting shuttle boxes

A. C. Krukonis (to Crompton & Knowles Loom Works). USP 2 703 588, March 8, 1955.

Weft stop motion

V. F. Sepavich (to Crompton & Knowles Loom Works). USP 2 703 591, March 8, 1955.

KNITTING C 3

Stroboscopic apparatus for determining the running speed of individual yarns in multi-feeder knitting machines

E. V. Stibbe and B. Smith (to G. Stibbe & Co. Ltd). BP 715 261, September 8, 1954. Through *BCIRA 35:* 62 (1955).

Method of cutting and binding yarns on a circular, independent needle, knitting machine

I. H. C. Green (to Hemphill Co.). USP 2 702 462, February 22, 1955.

FABRICS C 4

Belting and the manufacture thereof

F. W. Warren, H. Riding and W. Lord (to Dunlop Rubber Co. Ltd). BP 715 059, September 8, 1954. Through *BCIRA 35:* 72 (1955).

Endless woven belts

N. Lawson (to Lewis & Taylor Ltd). BP 715 405, September 15, 1954. Through *BCIRA 35:* 72 (1955).

Fabric or cloth for paper-making machines, screens, and similar purposes

F. Oberdorfer (Germany). BP 715 522, September 15, 1954. Through *BCIRA 35:* 63 (1955).

Heat protective garments

Metall und Rohstoff AG (Austria). BP 716 175, September 29, 1954. Through *BCIRA 35:* 63 (1955).

Pile carpets, rugs and the like

L. H. Mackay and J. Mackay (to Hugh Mackay & Co. Ltd). BP 716 185, September 29, 1954. Through *BCIRA 35:* 62 (1955).

Astatic woven fabric consisting of plasticized filaments

C. Harmon (to Chicopee Mfg. Corp.). USP 2 702 257, February 15, 1955.

Cushion pile fabric and method

F. W. E. Hoeselbarth (to C. H. Masland & Sons). USP 2 702 933, March 1, 1955.

High tear strength resin-coated nylon fabric and method of making the same

E. V. Painter and L. D. Frisoli (to Fabric Research Laboratories, Inc.). USP 2 702 764, February 22, 1955.

Machine for forming composite fiber webs

H. H. Langdon and F. M. Buresh (to Curlator Corp.). USP 2 703 441, March 8, 1955.

Rippling textured fabric (velvet pile carpet)

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 702 056, February 15, 1955.

Thermal-insulation fabric and method of making the same

J. S. Carter (to Roosevelt Mills, Inc.). USP 2 702 463, February 22, 1955.

FINISHING AND CHEMICAL PROCESSING D

CHEMICAL PROCESSES D 1

Apparatus for applying liquids to yarns

R. Murray and N. Payne (to Imperial Chemical Industries Ltd). BP 713 276, August 11, 1954. Through *BCIRA 35:* 58 (1955).

Apparatus for making adhesively backed pile fabrics

G. B. E. Schueler. BP 713 741, August 18, 1954. Through *BCIRA 35:* 72 (1955).

Crease-resistant treatment of textile fabrics consisting of or containing organic derivatives of cellulose

A. E. Battye (to Tootal Broadhurst Lee Co. Ltd). BP 715 201, September 8, 1954. Through *BCIRA 35:* 73 (1955).

Method of treating nylon filament yarn for use in composite rubber structures

F. H. Muller and P. E. Johnson (to Specialties Development Corp.). BP 716 017, September 22, 1954. Through *BCIRA 35:* 59 (1955).

Process for the treatment of fabrics with resinous condensation products

R. A. Blease and J. T. Marsh (to Tootal Broadhurst Lee Co.). BP 713 001-002, August 4, 1954. Through *BCIRA 35:* 72 (1955).

Production of linen-like and similar finishes on cotton fabrics

Heberlein & Co. AG (Austria). BP 715 376, September 15, 1954. Through *BCIRA 35:* 73 (1955).

Treatment of fabric with resins and quaternary ammonium salts for crease resistance

J. R. F. Jackson and R. H. Roberts (to Imperial Chemical Industries Ltd). BP 713 756, August 18, 1954. Through *BCIRA 35:* 73 (1955).

Use of bisulfite compounds of mono- or poly-functional organic isocyanates and isothiocyanates in the finishing of cellulosic textile materials

J. G. Evans, J. H. Leach and W. S. Meals (to Bradford Dyers' Association Ltd). BP 716 232-236, September 29, 1954. Through *BCIRA 35:* 73 (1955).

Fire-retardant compositions

I. V. Wilson and R. Marotta (to Monsanto Chemical Co.). USP 2 702 283, February 15, 1955.

Method of bonding fabric to another surface

S. A. Leader (England). USP 2 703 776, March 8, 1955.

Method of brightening fabrics with sulfonated dibenzothiophene dioxide derivatives

M. Scalera and D. R. Eberhart (to American Cyanamid Co.). USP 2 702 759, February 22, 1955.

Method of treating cellulose fibers to diminish fuzz, to increase dimensional stability and to increase luster and stiffness, with alkali solutions of copper or nickel biuret

W. H. Kahler, L. L. Balassa and H. F. Ross (to Hathaway Mfg. Co.). USP 2 702 228, February 15, 1955.

Wool chlorination process

L. O. Koons and E. C. Dreby III (to Scholler Brothers, Inc.). USP 2 702 737, February 22, 1955.

DYEING AND PRINTING D 2

Expandible mandrel for holding rayon cakes of different interior diameters snugly during dyeing

E. A. Stienen. BP 714 945, September 8, 1954. Through *BCIRA 35:* 69 (1955).

Process for improving the fastness of dyeings on nylon

G. T. Douglas, J. G. Graham and H. R. Hadfield (to Imperial Chemical Industries Ltd). BP 715 919, September 22, 1954. Through *BCIRA 35:* 69 (1955).

Process for improving the fastness to washing of dyeings

Cassella Farbwerke Mainkur (Germany). BP 715 532, September 15, 1954. Through *BCIRA 35:* 70 (1955).

Process for preparing ice colors in textile printing and dyeing

Farbenfabriken Bayer (Germany). BP 715 249, September 8, 1954. Through *BCIRA 35:* 70 (1955).

Process for producing metallic gloss print effects of any desired color and resistant to rubbing and washing, on textile and other materials, such as leather, paper and the like

P. A. Koch and A. Babinski (to Grasser & Co. AG). BP 716 038, September 29, 1954. Through *BCIRA 35:* 71 (1955).

Resist-printing of non-cellulosic textile materials

P. Krug (to Hardman & Holden Ltd). BP 715 393, September 15, 1954. Through *BCIRA 35:* 70 (1955).

Use of polyvinyl alcohol solutions as thickeners in the printing of nylon fabrics

Farbwerke Hoechst AG (Germany). BP 715 170, September 8, 1954. Through *BCIRA 35:* 70 (1955).

Dyeing apparatus

V. C. Bohm. USP 2 702 464, February 22, 1955.

MECHANICAL PROCESSES D 3

Apparatus for heat-sealing the trimmed seams of slippery thermoplastic material such as nylon

C. M. Platts (to Autoseam Ltd). BP 715 154, September 8, 1954. Through *BCIRA 35:* 63 (1955).

Guard for calenders

A. A. Young. BP 715 476, September 15, 1954. Through *BCIRA 35:* 74 (1955).

Guide means for fabric in textile finishing machines

R. Meissner. BP 713 874, August 18, 1954. Through *BCIRA 35:* 74 (1955).

Processes for producing on woven materials pattern effects combined with permanent mechanical effects

Heberlein & Co. AG (Austria). BP 716 002, September 22, 1954. Through *BCIRA 35:* 75 (1955).

DRYING D 4

Drying or like treatment apparatus for web material with fluid deflecting baffle means

J. Dungler (Switzerland). USP 2 700 226, January 25, 1955.

Moisture control in textile drying

J. S. Seney (to E. I. du Pont de Nemours and Co.). USP 2 702 948, March 1, 1955.

TESTING AND MEASUREMENT E

FABRICS E 3

Apparatus for analyzing fabric for structural defects

G. A. W. Abbott (Canada). USP 2 701 980, February 15, 1955.

Electrical apparatus for determining the moisture content of a traveling web

J. S. Seney (to E. I. du Pont de Nemours and Co.). USP 2 703 386, March 1, 1955.

Wrinkle resistance tester

R. G. Stoll (to Celanese Corp.). USP 2 701 962, February 15, 1955.

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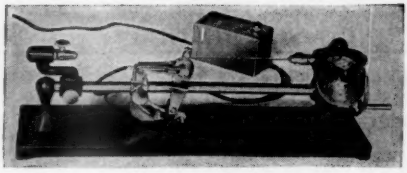

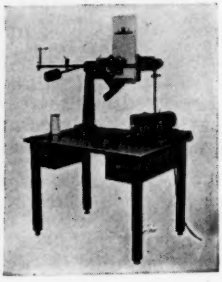

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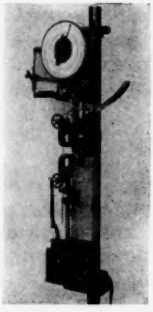

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